UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

August 30, 2005

Reply To
Attn. Of: **OEA-095**

MEMORANDUM

SUBJECT: Data Validation for Atka Cape Kudugnak PA/SI, Case# 34482, SDG: MJ64D5, Inorganic Analysis

FROM: Donald Matheny, Chemist DM
Technical Support Unit, OEA

TO: Ken Marcy, Regional Project Manager
Office of Environmental Cleanup

CC: Mark Woodke, Ecology & Environment

The data validation of inorganic analyses for the above sample set is complete. Six (6) soil/sediment samples were analyzed for total elements by Chemtech Consultants, Mountainside, NJ. Sample numbers for this delivery group are as follows:

MJ64D5 MJ64D6 MJ64D7 MJ64D8 MJ64D9 MJ64E0

DATA QUALIFICATIONS

The following comments refer to the lab's performance in meeting the quality control specifications outlined in the "CLP Statement of Work (CLP-SOW) for Inorganic Analysis, rev. ILM05.3", the "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA-540/R-94-013" and the judgment of the reviewer. The comments presented herein are based on the information provided for the review.

1.0 TIMELINESS - Acceptable

The holding time from the date of collection to the date of digestion and analyses were met for all elements (180 days, mercury 28 days). Samples were collected on 7/31/05. ICP-AES analysis was conducted on 8/23/05 and mercury analysis on 8/12/05.

2.0 INSTRUMENT CALIBRATION/VERIFICTION - Acceptable

For ICP-AES analysis, instrument calibration was performed in accordance with method requirements. Recoveries for instrument verification standards (92-102%) met the frequency (10%) and recovery (90-110%) criteria.

For mercury, a blank and five standards were digested for instrument calibration. The correlation coefficient (0.999) met the criterion ($\geq$ 0.995). Recoveries for verification standards (100-106%) met the frequency (10%) and recovery (80-120%) criteria.

Quantitation verification standards met both the frequency and recovery criteria for all elements.

3.0 ICP-AES INTERFERENCE CHECK SAMPLE (ICS) - Acceptable

An ICS was analyzed at the required frequency for each analytical run. ICS recoveries met the recovery criterion (80-120% or $\pm$ 2xCRDL) for all elements.

4.0 LABORATORY CONTROL SAMPLES (LCS) - Acceptable

Solid Laboratory Control Samples were digested and analyzed. All elements were recovered within the established control limits.

5.0 BLANKS

Preparation and instrument control blanks were prepared and analyzed in accordance with method requirements. Blank results were either non-detected or below a factor that could impact analytical sample results with the exception of antimony, selenium and cadmium. Affected samples were qualified (U) for these analytes.

6.0 MATRIX SPIKE ANALYSIS - Acceptable

A matrix spike analysis was performed for sample MJ64E0. The recovery range for this sample (89-117%) met the recovery criterion (75-125%) for all elements.

7.0 DUPLICATE SAMPLE ANALYSIS - Acceptable

A duplicate sample analysis was performed for sample MJ64E0. The range of relative percent differences ($\leq$ 8%) for this sample was within the control limits ($\pm$ 35% or $\pm$ 2xCRDL) for soil/sediments.

8.0 ICP-AES SERIAL DILUTION - Acceptable

A five-fold serial dilution was performed for sample MJ64E0. Percent differences (≤ 10%) were within the control criterion (≤ 10%) for all applicable elements.

9.0 ASSESSMENT SUMMARY

The following is a summary of qualified data: The (J) qualifier applied by the laboratory, represents results that are estimated. These values fall within a concentration range that is above the method detection limit but below the laboratory's quantitation limit. The (D) qualifier indicates that a dilution of the digest was required in order to quantify the analyte within the instrument calibration range.

A number of reported values for antimony, selenium and cadmium were qualified (U) due to the detected presence of these analytes in the preparation and/or instrument verification blanks.

DATA QUALIFIERS

U - The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

J - The associated value is an estimated quantity.

R - The data are unusable. The analyte may or may not be present in the sample.

UJ - The analyte was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

PROJECT SPECIFIC DATA QUALIFIERS:

L - Low bias.

H - High bias.

K - Unknown Bias.

USEPA - CLP

1A-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ64D5

Lab Name CHEMTECH CONSULTING GROUP Contract: 68-W0-2068

Lab Code: CHEM Case No.: 34482 NRAS No.: _____ SDG No.: MJ64D5

Matrix: (soil/water) SOIL Lab Sample ID: T4108-01

Level: (low/med) LOW Date Received: 08/05/2005

% Solids: 86.9

Concentration Units (**ug/L** or **mg/kg** dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12700			P
7440-36-0	Antimony	3.1	~~J~~	U	P
7440-38-2	Arsenic	17.7			P
7440-39-3	Barium	28.6			P
7440-41-7	Beryllium	0.09	J		P
7440-43-9	Cadmium	1.6			P
7440-70-2	Calcium	5550			P
7440-47-3	Chromium	30.1			P
7440-48-4	Cobalt	16.4			P
7440-50-8	Copper	91.1			P
7439-89-6	Iron	128000		D	P
7439-92-1	Lead	32.2			P
7439-95-4	Magnesium	6440			P
7439-96-5	Manganese	531			P
7439-97-6	Mercury	0.12			CV
7440-02-0	Nickel	74.6			P
7440-09-7	Potassium	289	J		P
7782-49-2	Selenium	1.1	~~J~~	U	P
7440-22-4	Silver	0.64	J		P
7440-23-5	Sodium	850			P
7440-28-0	Thallium	2.9	U		P
7440-62-2	Vanadium	48.0			P
7440-66-6	Zinc	31.7			P
57-12-5	Cyanide				NR

DM 8-30-05

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments:

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1A-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ64D6

Lab Name CHEMTECH CONSULTING GROUP Contract: 68-W0-2068

Lab Code: CHEM Case No.: 34482 NRAS No.: _____ SDG No.: MJ64D5

Matrix: (soil/water) SOIL Lab Sample ID: T4108-02

Level: (low/med) LOW Date Received: 08/05/2005

% Solids: 87.5

Concentration Units (**ug/L** or **mg/kg** dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17100			P
7440-36-0	Antimony	1.4	~~J~~	U	P
7440-38-2	Arsenic	4.4			P
7440-39-3	Barium	37.7			P
7440-41-7	Beryllium	0.12	J		P
7440-43-9	Cadmium	0.63			P
7440-70-2	Calcium	6480			P
7440-47-3	Chromium	2.9			P
7440-48-4	Cobalt	12.6			P
7440-50-8	Copper	50.2			P
7439-89-6	Iron	42400			P
7439-92-1	Lead	10.4			P
7439-95-4	Magnesium	8490			P
7439-96-5	Manganese	399			P
7439-97-6	Mercury	0.10	J		CV
7440-02-0	Nickel	12.6			P
7440-09-7	Potassium	293	J		P
7782-49-2	Selenium	0.37	~~J~~	U	P
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	1040			P
7440-28-0	Thallium	2.8	U		P
7440-62-2	Vanadium	68.2			P
7440-66-6	Zinc	34.1			P
57-12-5	Cyanide				NR

DM
8-30-05

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Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments:

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1A-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ64D7

Lab Name CHEMTECH CONSULTING GROUP Contract: 68-W0-2068

Lab Code: CHEM Case No.: 34482 NRAS No.: _____ SDG No.: MJ64D5

Matrix: (soil/water) SOIL Lab Sample ID: T4108-03

Level: (low/med) LOW Date Received: 08/05/2005

% Solids: 44.8

Concentration Units (**ug/L** or **mg/kg** dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3620			P
7440-36-0	Antimony	6.5	J		P
7440-38-2	Arsenic	10.2			P
7440-39-3	Barium	13.9	J		P
7440-41-7	Beryllium	1.1	U		P
7440-43-9	Cadmium	2.5			P
7440-70-2	Calcium	2040			P
7440-47-3	Chromium	30.4			P
7440-48-4	Cobalt	9.2	J		P
7440-50-8	Copper	53.1			P
7439-89-6	Iron	178000		D	P
7439-92-1	Lead	199			P
7439-95-4	Magnesium	590	J		P
7439-96-5	Manganese	401			P
7439-97-6	Mercury	0.18	J		CV
7440-02-0	Nickel	22.9			P
7440-09-7	Potassium	94.7	J		P
7782-49-2	Selenium	1.0	~~J~~	U	P
7440-22-4	Silver	2.3			P
7440-23-5	Sodium	338	J		P
7440-28-0	Thallium	5.5	U		P
7440-62-2	Vanadium	20.7			P
7440-66-6	Zinc	196			P
57-12-5	Cyanide				NR

DM 8.30.05

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Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments:

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1A-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ64D8

Lab Name CHEMTECH CONSULTING GROUP Contract: 68-W0-2068

Lab Code: CHEM Case No.: 34482 NRAS No.: _____ SDG No.: MJ64D5

Matrix: (soil/water) SOIL Lab Sample ID: T4108-04

Level: (low/med) LOW Date Received: 08/05/2005

% Solids: 53.7

Concentration Units (**ug/L** or **mg/kg** dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8690			P
7440-36-0	Antimony	2.9	J	U	P
7440-38-2	Arsenic	10.6			P
7440-39-3	Barium	19.5	J		P
7440-41-7	Beryllium	0.92	U		P
7440-43-9	Cadmium	1.6			P
7440-70-2	Calcium	5270			P
7440-47-3	Chromium	29.9			P
7440-48-4	Cobalt	12.1			P
7440-50-8	Copper	75.2			P
7439-89-6	Iron	50900			P
7439-92-1	Lead	457			P
7439-95-4	Magnesium	2160			P
7439-96-5	Manganese	209			P
7439-97-6	Mercury	0.10	J		CV
7440-02-0	Nickel	21.3			P
7440-09-7	Potassium	155	J		P
7782-49-2	Selenium	6.5	U		P
7440-22-4	Silver	0.33	J		P
7440-23-5	Sodium	823	J		P
7440-28-0	Thallium	4.6	U		P
7440-62-2	Vanadium	57.5			P
7440-66-6	Zinc	215			P
57-12-5	Cyanide				NR

DR 8-30-05

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Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments:

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1A-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ64D9

Lab Name CHEMTECH CONSULTING GROUP Contract: 68-W0-2068

Lab Code: CHEM Case No.: 34482 NRAS No.: _____ SDG No.: MJ64D5

Matrix: (soil/water) SOIL Lab Sample ID: T4108-05

Level: (low/med) LOW Date Received: 08/05/2005

% Solids: 72.6

Concentration Units (**ug/L** or **mg/kg** dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15200			P
7440-36-0	Antimony	3.0	~~J~~	U	P
7440-38-2	Arsenic	4.1			P
7440-39-3	Barium	41.5			P
7440-41-7	Beryllium	0.11	J		P
7440-43-9	Cadmium	0.60	~~J~~	U	P
7440-70-2	Calcium	6810			P
7440-47-3	Chromium	2.2			P
7440-48-4	Cobalt	10.8			P
7440-50-8	Copper	42.6			P
7439-89-6	Iron	36800			P
7439-92-1	Lead	8.8			P
7439-95-4	Magnesium	6500			P
7439-96-5	Manganese	300			P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	9.7			P
7440-09-7	Potassium	330	J		P
7782-49-2	Selenium	4.7	U		P
7440-22-4	Silver	0.37	J		P
7440-23-5	Sodium	1060			P
7440-28-0	Thallium	3.4	U		P
7440-62-2	Vanadium	59.1			P
7440-66-6	Zinc	31.9			P
57-12-5	Cyanide				NR

DM 8-30-05

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Comments:

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1A-IN
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJ64E0

Lab Name CHEMTECH CONSULTING GROUP Contract: 68-W0-2068

Lab Code: CHEM Case No.: 34482 NRAS No.: _____ SDG No.: MJ64D5

Matrix: (soil/water) SOIL Lab Sample ID: T4108-06

Level: (low/med) LOW Date Received: 08/05/2005

% Solids: 15.5

Concentration Units (**ug/L** or **mg/kg** dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4900			P
7440-36-0	Antimony	6.8	J		P
7440-38-2	Arsenic	6.5	U		P
7440-39-3	Barium	13.8	J		P
7440-41-7	Beryllium	3.2	U		P
7440-43-9	Cadmium	3.2	U		P
7440-70-2	Calcium	4330			P
7440-47-3	Chromium	3.3	J		P
7440-48-4	Cobalt	3.8	J		P
7440-50-8	Copper	21.0			P
7439-89-6	Iron	7020			P
7439-92-1	Lead	3.6	J		P
7439-95-4	Magnesium	1650	J		P
7439-96-5	Manganese	133			P
7439-97-6	Mercury	0.65	U		CV
7440-02-0	Nickel	3.8	J		P
7440-09-7	Potassium	713	J		P
7782-49-2	Selenium	22.6	U		P
7440-22-4	Silver	6.5	U		P
7440-23-5	Sodium	1180	J		P
7440-28-0	Thallium	16.1	U		P
7440-62-2	Vanadium	22.2	J		P
7440-66-6	Zinc	35.9	J		P
57-12-5	Cyanide				NR

DM
8-30-05

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Comments: